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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,901	04/06/2001	Helmut Jakusch	P20740	6402

7055 7590 07/30/2003

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EXAMINER
AHMED, SHEEBA

ART UNIT	PAPER NUMBER
1773	7

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/826,901	JAKUSCH ET AL.	
	Examiner	Art Unit	
	Sheeba Ahmed	1773	

-- The MAILING DATE f this communicati n appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *17 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-16, 18, 19, and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-16, 18, 19, and 21, in Paper No. 7 is acknowledged. The traversal is on the grounds that there would not be a serious burden on the Examiner to examine the Applicant's application in total and that the differences pointed out in the restriction requirement do not appear to be material for examination. However, the Examiner disagrees with the Applicants arguments given that Inventions II and I are related as process of making and product made and the inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). As previously pointed out, the magnetic recording medium, in this case, could be made by a different process. For example, the magnetic recording medium could be made by a process wherein the dispersion of the isotropic magnetically soft pigment, binder and solvent could be applied to the substrate and the resulting moist layer could be oriented in a magnetic field before applying the subsequent dispersion of the magnetic pigment, binder and solvent.

Hence, this restriction requirement is maintained and made **FINAL.**

Claims 1-21 are pending of which 17 and 20 are withdrawn from consideration.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5-7, 12, 15, 18, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munch et al. (US 5,641,355) in view of Inoue et al. (US 5,989,703).

Munch et al. disclose a process for making a magnetic recording medium having a nonmagnetic substrate and at least one magnetic applied thereon (Column 1, lines 5-8). The process can be used to make a double-layer magnetic tape having two magnetic layers (Column 4, lines 60-68). Example 4 illustrates an arrangement having two magnetic layers. The lower layer comprises acicular chromium oxide having an H_c of 37 kA/m, carbon black and a polyurethane binder and the upper layer comprise magnetizable metal powder having an H_c of 133kA/m and a polyurethane binder. The upper layer has a thickness of 0.2 microns and the lower layer has a thickness of 1.5 microns (Column 5, lines 61-63).

Munch et al. do not teach that the lower layer comprises an isotropic magnetically soft pigment, which is selected from γ-Fe_2O_3, Fe_3O_4, or a solid solution of these components, and has a mean crystallite size of less than 10 nm (or 6nm as recited in claim 5).

However, Inoue et al. disclose a process to make γ-Fe_2O_3 having a small crystallite size *(i.e., less than 30 nm and hence overlapping with the instantly claimed range)* and magnetism and use of such particles in a magnetic recording medium comprising a nonmagnetic substrate coated with a magnetic layer. The use of such an iron oxide magnetic powder allows the viscosity of the coating to be lowered, provides excellent coating characteristics, excellent surface characteristics and satisfactory electromagnetic conversion characteristics (Column 2, lines 1-6, 22-25, and 55-68).

Accordingly, it would have been obvious to one having ordinary skill in the art to replace the acicular chromium oxide in the lower layer of the magnetic recording medium taught by Munch et al. with a γ-Fe_2O_3 having a small crystallite size (i.e., less than 30 nm) given that Inoue et al. specifically teach that use of such particles in the lower layer of a magnetic recording medium allows the viscosity of the magnetic coating to be lowered, provides excellent coating characteristics, excellent surface characteristics and satisfactory electromagnetic conversion characteristics (Column 2, lines 1-6, 22-25, and 55-68). With regards to the limitation that the lower layer has a coercive force of less than 0.7 KA/m (or 0.3 KA/m as recited in claim 7), the Examiner takes the position that such a limitation is met by the γ-Fe_2O_3 containing lower layer taught by Munch and Inoue et al. given that the composition of the layer (i.e., a binder and γ-Fe_2O_3 layer) and the structure of the layer (i.e., the type and amount of particles employed) is the same.

3. Claims 4, 8-11, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munch et al. (US 5,641,355) in view of Inoue et al. (US 5,989,703) and Yamazaki et al. (US 5,714,275).

Munch et al. disclose a process for making a magnetic recording medium having a nonmagnetic substrate and at least one magnetic applied thereon (Column 1, lines 5-8). The process can be used to make a double-layer magnetic tape having two magnetic layers (Column 4, lines 60-68). Example 4 illustrates an arrangement having two magnetic layers. The lower layer comprises acicular chromium oxide having an H_c of 37 kA/m, carbon black and a polyurethane binder and the upper layer comprise magnetizable metal powder having an H_c of 133kA/m and a polyurethane binder. The upper layer has a thickness of 0.2 microns and the lower layer has a thickness of 1.5 microns (Column 5, lines 61-63). On the other hand, Inoue et al. disclose a process to make γ-Fe_2O_3 having a small crystallite size *(i.e., less than 30 nm and hence overlapping with the instantly claimed range)* and magnetism and use of such particles in a magnetic recording medium comprising a nonmagnetic substrate coated with a magnetic layer. The use of such an iron oxide magnetic powder allows the viscosity of the magnetic coating to be lowered, provides excellent coating characteristics, excellent surface characteristics and satisfactory electromagnetic conversion characteristics (Column 2, lines 1-6, 22-25, and 55-68).

Munch et al. and Inoue et al. do not teach that the magnetic pigment in the upper layer is a ferrite pigment, that the weight % of the magnetically soft pigment in the lower layer is within the range recited in claims 8 and 9 of the instant application, that the γ-

Fe_2O_3 in the lower layer has been surface treated with an aluminum or silicon compound, that the nonmagnetic pigment in the lower layer meets the limitations recited in claim 13 and is a mixture of carbon black and α-Fe_2O_3.

Yamazaki et al. disclose a magnetic recording medium comprising a magnetic layer, a lower layer and an upper magnetic layer and shows excellent electromagnetic characteristics. The upper layer comprises ferrite particles (Column 3, lines 1-25) and the lower layer comprises γ-Fe_2O_3 which may be treated with a surface treating agent (Column 6, lines 10-22). The lower layer further comprises inorganic compounds such as α-iron oxide and the particle size of theses particles is 0..05 to 2 microns and the particle shape may be acicular, spherical, polyhedral, or hexagonal. The surfaces of the particles are treated with aluminum or silicone oxide and such a treatment results in a homogenous and dense surface layer (Column 7, lines 1-64). Carbon black may also be incorporated into the lower layer and is known to reduce the Rs effect.

Accordingly, it would have been obvious to one having ordinary skill in the art modify the magnetic recording medium taught by Munch et al. and Inoue et al. by using a ferrite magnetic pigment in the upper layer, by surface treating the γ-Fe_2O_3 in the lower layer with an aluminum or silicon compound, and by using a mixture of carbon black and α-Fe_2O_3 in the lower layer given that Yamazaki et al. specifically teach that the use of ferrite particle provides excellent electromagnetic characteristics, and surface treatment with an aluminum or silicone oxide results in a homogenous and dense surface layer and that the addition of carbon black is known to reduce the Rs effect. Furthermore, it would have been obvious to one having ordinary skill in the art to

optimize the weight percentage of the magnetically soft pigment in the lower layer given that it is known that the amount of magnetization of a layer can be controlled by controlling the amount of magnetically soft pigment present in the layer.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mon-Fri 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.

Sheeba Ahmed
Art unit 1773
July 26, 2003